Background and Aims

This unit is an introduction to the structural methods available to improve stormwater quality discharging to downstream receiving waters that achieve standards acceptable for a range of active and passive recreational activities.

After completing this unit participants will be:

- able to apply strategic planning principles for stormwater management.
- capable of stormwater solutions that are consistent with existing legislation.
- able to develop urban drainage designs which employ “test management” principles.
- able to select and design treatment sequences that produce acceptable outflows.

Details of the structure of the unit are provided over the page

Off-Campus Study Mode

The program is taught by off-campus learning which means you can balance your work and study while attaining your qualification with Monash University. There are no classes to attend so you can study where and when you like. Students from all over the world study in the postgraduate program, thanks to its flexible off-campus learning mode. Students and graduates can be found throughout Australia, New Zealand, the Middle East, Europe, North America and Africa.

A combination of printed study material and electronic communications are used in the delivery of the program. Academic assistance can be obtained by email or telephone. Discussion groups and other forms of on-line communication are also available for communicating with staff and other students.

Unit Co-ordinator

Tony has more than 20 years experience in hydrology and water resource management and has worked on projects throughout Australia and in the US and Taiwan. He has a PhD from the University of Melbourne, a Master of University of Minnesota, a Graduate Certificate in Higher Education from Monash University, and also studied at Uppsala University in Sweden. Tony recently joined SKM from Monash University and retains associate status of both Monash University and the University of Melbourne.

Tony has more than 60 refereed publications and recently completed a book on Australian Hydrology for Oxford University Press.

Enrolment Options

Enrol in the Master of Infrastructure Engineering and Management or as a single unit. Exit options are also available for the Graduate Certificate in Infrastructure Engineering and Management or the Graduate Diploma in Infrastructure Engineering and Management.

Enrolment or General Course Enquiries:
Ms Brenda O'Keefe
Tele: +61 (0)3 9905 9627
Fax: +61 (0)3 9905 4944
Email: brenda.okeefe@monash.edu
Website: eng.monash.edu.au/civil/current/nts/infrastructure/
## Structure

*The unit is structured around 12 topics which are generally associated with one week of study*

<table>
<thead>
<tr>
<th>Topic</th>
<th>After completing this topic, participants will:</th>
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• Appreciate the “Stormwater Agreement” established by Water Authorities and the use of Stormwater Management Plans.                                                                                                                                                |
| 2. Effects of Catchment Urbanisation on Stormwater                    | • Understand the effects of Urbanisation on catchments and the environmental problems generated.  
• Appreciate the responsibilities of organisations to manage urban stormwater.                                                                                                                                                                                          |
| 3. Ecosystem Health – Definition and Assessment                       | • Understand the concepts of ecosystem health in terms of sustainability.  
• Appreciate the factors that influence ecosystem health.                                                                                                                                                                                                                  |
| 4. Developing Stormwater Management Strategies                        | • Understand changing community needs and attitudes to urban drainage and the consequent need to employ Best Management Practices.  
• Understand the choices in components of a Water Sensitive Urban Design treatment train.                                                                                                                                                                               |
| 5. Field Inspection and Reporting on Local Stormwater Treatment on Measures | • Be aware of local sites where WSUD principles have been employed.  
• Understand the development pressures and alternatives that are developing.                                                                                                                                                                                              |
| 6 & 7. Gross Pollutant Traps                                         | • Understand the operating mechanisms of different GPT’s.  
• Be capable of sizing GPT’s under varying conditions of operation.                                                                                                                                                                                                       |
| 8. Grass Swales and Buffer Strips                                    | • Understand the operating mechanisms of swales and buffer strips and their design.                                                                                                                                                                                       |
| 9 & 10. Stormwater “Source Control” Using Infiltration: Some Design Procedures | • Understand the operating mechanisms of On-Site Retention systems.  
• Appreciate the environmental improvements associated with On-Site Retention Systems.                                                                                                                                                                                |
| 11 & 12. Constructed Ponds and Wetlands                             | • Understand the operating mechanisms of Ponds and Wetlands and the use of different methods zones to achieve improved water quality.  
• Able to design effective wetland system treatment trains.                                                                                                                                                                                                               |

*Updated October 2012*